

## **MULTI-APERTURE HIGH-FILL-FACTOR TELESCOPE**

### **ABSTRACT OF THE DISCLOSURE**

A multi-aperture high-fill-factor telescope is provided. Specifically a multi-aperture high-fill-factor telescope is provided that includes a plurality of sub-aperture telescopes, each sub-aperture telescope being configured to collect electromagnetic radiation from a scene and including first, second, third, and fourth powered mirrors; a set of combiner optics configured to combine electromagnetic radiation collected by the sub-aperture telescopes to form an image of the scene; and a plurality of sets of relay optics, the sets of relay optics are respectively associated with the sub-aperture telescopes and each set of relay optics includes a first flat fold mirror, a trombone mirror pair, and a last flat fold mirror, wherein the last flat fold mirrors are disposed within about a beam diameter of respective exit pupils of the sub-aperture telescopes.

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